



The State Broadband Index

An Assessment of State Policies Impacting Broadband Deployment and Demand



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Analysis
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1 Executive Summary

In 2002, TechNet called for an ambitious goal of an affordable 100Mbps broadband connection to 100 million American homes and small businesses by 2010, and a national strategy to achieve this goal. This report, prepared by Analysys Consulting and TechNet, examines the key role that states can play in helping to make broadband available to all Americans. In three major areas, state policies can have a significant impact on broadband deployment:

- State legislators and regulators are uniquely positioned to clear roadblocks and hurdles to broadband deployment, particularly burdensome rights-of-way policies imposed by local governments.
 - *States should adopt policies that standardize and expedite rights-of-way permitting*
 - *States should limit the fees imposed for rights-of-way access*
- State policies can create targeted, supply-side incentives for the deployment of broadband. These policies can include both financial and non-financial incentives for suppliers to make broadband available to all communities.
 - *States should adopt a broadband strategy and formal plan*
 - *States should assess their broadband status through a map or catalog of existing infrastructure*



- *States should allow municipalities to provide wholesale services with their own broadband networks*
- *States should encourage broadband investment through innovative supply-side initiatives*
- *States should consider financial incentives for broadband deployment, in particular to underserved communities*
- State investment in, and offering of, e-learning applications, health services and other e-government initiatives can play an important role in driving consumer demand for broadband. States can further promote demand by subsidizing user access.
 - *States should adopt initiatives that provide incentives for public-sector and private-sector users to access broadband networks*
 - *States should actively encourage broadband usage by citizens through e-government initiatives*
 - *States should encourage government usage of broadband applications*
 - *States should consider providing financial support that encourages the development of broadband applications that improve government services or support next-generation technologies*

Broadband deployment, in turn, will significantly reward those states making the right policy choices today.

- Businesses increasingly rely on broadband to stay connected to company operations, suppliers, customers and employees who telecommute. For them, broadband availability will comprise an important component of company location decisions, impacting state employment and economic growth.



- Increasingly, citizens will choose where to live based on the availability of broadband for both work and pleasure.
- State governments will benefit from increased broadband deployment that enables them to function more efficiently and improve the delivery of vital services to their citizens.

In this report, we survey state policy initiatives that can have a significant impact on broadband deployment and demand. Using this analysis, we have ranked the states based on the extent to which their public policies spur or impede broadband deployment and demand. We have also developed a guide to "best practices" that can act as a roadmap of efforts that states can use to jump start broadband deployment.

Michigan leads the list of states that have enacted policies to accelerate broadband deployment and spur demand for broadband applications and services, by virtue of a comprehensive strategy to bring the benefits of broadband to all its citizens through policies that clear deployment roadblocks, promote supply and spur demand.



2 Introduction

In 2002, TechNet called for an ambitious goal of an affordable 100Mbps broadband connection to 100 million American homes and small businesses by 2010, and a national strategy to achieve this goal. While today's broadband offers significant improvements over dial-up Internet, it is still not fast enough to unleash the full capabilities of new, high-quality applications. A national strategy and supporting policies that encourage investment in a next generation broadband infrastructure, applications and services will be essential if the U.S. is to maintain its global technological and economic leadership.

With this report, prepared by Analysys Consulting, TechNet examines the key role that states can play in helping to make broadband available to all Americans. While the private sector should drive deployment of a next generation broadband network, policymakers, and, in particular, state governments, have a major role to play in achieving this goal. Without a concerted state-by-state commitment to a business climate that facilitates broadband deployment, a national broadband strategy cannot succeed.

State policies have a significant impact on broadband deployment in three major areas:

- State legislators and regulators are uniquely positioned to clear roadblocks and hurdles to broadband deployment, particularly those imposed by local governments.
- State policies can create targeted, supply-side incentives for the deployment of broadband. These policies can include both financial and non-financial incentives for suppliers to make broadband available to all communities.



- State investment in, and offering of, e-learning applications, health services and other e-government initiatives can play an important role in driving consumer demand for broadband. States can further promote demand by subsidizing access to broadband.

Broadband deployment, in turn, will significantly reward those states making the right policy choices today with a more competitive business environment. Just as rivers and ports, followed by railroads, highways, and airports were once essential determiners of where companies chose to locate and where industry flourished, so, too, is access to broadband today.

Companies are becoming increasingly global, and require broadband to stay connected to operations and customers around the world, and employees who telecommute. Even smaller businesses rely on broadband connections to communicate with customers and suppliers. These companies will boost employment and investment in the states where they locate, and attract an innovative, entrepreneurial workforce. State governments, too, will benefit from increased broadband deployment that will enable them to function efficiently and improve the delivery of vital services to their citizens.

The impact of accelerated broadband deployment on state economies can be significant. Recent studies commissioned by the state of Michigan, for example, have estimated a \$440 billion increase in the gross state product (GSP) and almost 500,000 new jobs over a decade.¹ A separate analysis of broadband's impact on the state of California conducted for the Corporation for Education Network Initiatives in California (CENIC) in 2003 estimates an increase of \$376 billion in incremental GSP and nearly two million new jobs over a ten-year period.²

In addition to the economic benefits, broadband promises an enhanced quality of life for citizens and communities, through reduced traffic congestion and pollution resulting from

¹ "Michigan Economic Development Corporation Releases Study Detailing Benefits of Accelerating Statewide Broadband Deployment," MEDC Press Release, December 3, 2001 (see <http://medc.michigan.org/news>).

² "One Gigabit or Bust Initiative: A Broadband Vision for California," CENIC and Gartner Consulting, May 2003.



teleworking; improved education systems through technology-based initiatives; revitalized urban centers and communities through Wi-Fi hot spots and broadband-enabled "cyber districts"; and more efficient and user-friendly government services that enhance participatory democracy.

Many states have recognized the benefits of broadband to their citizens and economies, and are actively stimulating broadband deployment through wide-ranging and ambitious programs. These states recognize that investment in a next-generation broadband infrastructure is a critical component of state economic development efforts and an improved quality of life for their citizens.

Unfortunately, other states have created or tolerated significant obstacles to broadband deployment, primarily as a result of municipal rights-of-way policies that impose excessive regulatory requirements, delays and costs on broadband providers. Finally, some states have been content to sit on the sidelines, waiting for broadband to come to them.

We have surveyed state policy initiatives that can have a significant impact on broadband deployment and demand. Using this analysis, we have then ranked the states based on the extent to which their public policies spur or impede broadband deployment and demand. We have also developed a guide to "best practices" that can act as a roadmap to state efforts to jump-start the deployment of broadband.

The goal of this report is to:

- highlight the critical role that states will play in achieving a national broadband strategy and an aggressive broadband deployment goal
- demonstrate the range of state initiatives with the potential for promoting broadband
- recognize those states that are effectively promoting broadband deployment and demand.



How the Index was Developed

The Broadband Index is a ranking of the nation's top 25 states, based on the extent to which their policies spur or impede broadband deployment and demand. To create the Index, we identified the range of state laws, regulations or other public policies that can significantly impact broadband in three categories: policies that address broadband deployment, supply-side policies and policies to spur broadband demand. The list of policies was further refined based on extensive discussions with stakeholders in the private and public sectors, including state policymakers. We then worked closely with TechNet members to determine the preferred approach to each policy, i.e. the approach that would most effectively encourage broadband deployment and demand.

We then catalogued laws and regulations in each of the 50 states. States received credit for adopting the policy approaches that were determined to be most effective in promoting broadband. Each state's scores were added together in order to produce the ranking.

We did not analyze local laws or regulations, nor did we consider federal programs that impact the states. Notably, we did not incorporate state regulation of telecommunications networks in the Index, and specifically, state regulations regarding network "unbundling". The recent Federal Communications Commission decision appears to make this a matter of federal jurisdiction, and therefore beyond the scope of the report.³

The result is a comprehensive analysis of state policies that impact broadband deployment and demand and a resulting ranking of the states. A detailed description of the methodology appears in Annex A.

³ See "FCC Adopts New Rules for Network Unbundling Obligations of Incumbent Local Phone Carriers," FCC Press Release, February 20, 2003.

3 Examining the State Role

Three broad categories of state policies can significantly impact broadband deployment:

- policies to address deployment roadblocks
- supply-side policies
- demand-side policies.

Within each of these categories, we have identified specific state policies with the greatest potential to meet an ambitious broadband goal.

3.1 Policies to Address Deployment Roadblocks

Although current broadband technologies are widely available, if not widely adopted, they rely on existing last mile copper loops and coax cables and run at speeds far short of a 100Mbps connection to the home or business. Such speeds are currently only available over next generation fiber networks and wireless systems. While the necessary technologies exist today, deployment of true broadband connectivity typically requires network providers to access public rights-of-way for backhaul and end-user access. The process of securing rights-of-way access, however, is often costly and time-consuming. Therefore, one of the most significant impacts that states can have over broadband deployment is through their control over access to the public rights-of-way and property that is required to deploy new infrastructure. As a result, these policies are weighted the highest in our ranking of the states based on broadband policies.

In many states, municipalities are solely responsible for setting rights-of-way policies, and the result has often been high fees for such access. For example, providers have been charged with exorbitant annual per-foot charges or fees based on a percentage of a provider's gross revenue,



both unrelated to the cost of using rights of way, and in many cases, far in excess of appraised values of these easements. In some cases, providers have been charged in-kind payments in the form of free fiber, services and conduit. In short, some municipal governments have viewed their rights-of-way authority as an opportunity to generate government revenues, at the expense of accelerated, cost-effective broadband deployment.

In other cases, access is delayed by bureaucratic processes, or even neglect, further retarding deployment. Municipalities may also use the granting of rights-of-way access to impose burdensome regulations on providers that are unrelated to such access. Often, dispute resolution is also not undertaken in a timely fashion. On top of high fees, these delays can add significant costs to a broadband deployment project.

Finally, not only can individual municipal policies impose unreasonable burdens on providers, but these burdens can be magnified for providers with ambitions to serve multiple municipalities in a state. Each municipality may have its own policies, impose separate requirements or fees, and take different lengths of time to grant permits. This inconsistency across a state makes it very difficult to plan a coherent network rollout. In addition, differing municipal permit applications and fees paid to separate authorities means that there are few regulatory economies of scale to provide incentives to rollout large networks in a particular state.

The result of these burdensome and inconsistent policies is to put pressure on providers to focus their scarce capital where it is most welcomed. At a minimum this has prolonged deployment efforts. At the extreme, operators have chosen to redirect their deployment efforts and scarce capital resources to jurisdictions that have taken a more reasonable approach to rights-of-way policy.

In response, a number of states have begun to place limits on the ability of municipalities to impose excessive regulatory requirements, delays and costs, thereby easing constraints on access to rights-of-way. Currently, 26 states have placed some limits on the actions of municipalities. The National Association of Regulatory and Utility Commissioners has

developed a detailed report on these policies and a guide for communities to streamline regulations for deployment of new telecommunications infrastructure.⁴

These policies serve to minimize the regulatory burdens on companies seeking to deploy new infrastructure for broadband services while ensuring that state and local governments are adequately compensated. The resulting elimination of costs and delays in the deployment of broadband technologies will benefit consumers and businesses, while significantly improving the development of regional economies.

- ***States should adopt policies that standardize and expedite rights of way permitting***

States should consider adopting legislation that requires municipal action on requests for access to public rights of way within a specific, reasonable time frame. Those states that have imposed limits on the amount of time that a municipality can take to process a rights-of-way permit allow from 30 to 45 days.

Other effective state policies include: offering streamlined resolution of rights-of-way disputes; standardizing the permit application statewide, and prohibiting local regulations that set requirements on providers that are unrelated to rights-of-way usage.

- ***States should limit the fees imposed for rights-of-way access***

States should impose limitations on the fees that municipalities may charge for rights-of-way access. Such policies enable municipalities to be compensated for rights-of-way access, while at the same time ensuring that rights-of-way fees do not create a disincentive for deployment.

⁴ See "Promoting Access Through Public Rights-of-Way and Public Lands" NARUC, July 31, 2002. In addition, the National Telecommunications and Information Administration (NTIA) just released a comprehensive survey of state rights-of-way policies. "50-State Survey of Rights-of-Way Statutes," NTIA, May 21, 2003.

Several states have adopted legislation that sets specific limits on the fees that can be charged by a municipality. These limits include a set monthly fee, a certain percentage of revenues of the provider, or a fixed fee per lineal foot of infrastructure utilizing the public rights-of-way.

Other states have limited fees to the “reasonable costs” incurred by the municipality in managing the rights-of-way access. This, of course, leaves the exact fee open to interpretation by the municipality, but may result in lower fees than those that are specified by states.

Some states have also kept costs to reasonable levels by explicitly preventing municipalities from charging in-kind compensation, such as free fiber, services and conduit, in return for rights-of-way access. Finally, the cost and inconvenience of broadband deployment can be minimized through coordination of infrastructure development and construction. Some states have provided incentives for companies to coordinate their deployment efforts by reducing the fees charged to each company willing to coordinate the timing of construction.

3.2 Supply-Side Policies

Even in an environment that removes roadblocks in order to encourage deployment, there may be insufficient investment in new networks. In a market-oriented environment that encourages the deployment of broadband networks, there still may be a segment of a state's population that does not have broadband availability. In these cases, there may be a need for states to provide incentives to spur deployment to underserved communities.

States are well positioned to identify underserved areas or population segments and provide incentives to spur deployment to those areas, where private providers may not have incentive to invest. State policymakers should consider whether it is necessary to spur more rapid investment to residences, rural areas, inner cities, commercial areas bordering or remote from the central business district (where fiber may already exist) and other potentially underserved communities through incentives that stimulate broadband deployment. While financial incentives may be very effective in promoting deployment, in recognition of the fiscal

restraints facing states, we have also identified successful policies that utilize non-financial incentives to spur deployment.

We weight these supply-side policies second in importance to policies that address deployment regulations, consistent with the principle that the most effective policy approach is to remove regulations so as to encourage private sector investment.

- ***States should adopt a broadband strategy and formal plan***

State policies to encourage broadband deployment and demand should be formalized in a coherent plan, with objectives and actions for meeting those objectives. This ensures a common statewide understanding of the broadband goals, and also provides a roadmap for meeting these goals. In any such plan, it is important that states not attempt to define particular technologies that should be employed, but encourage an environment that enables those technologies that best meet identified state and local broadband needs. Currently, few states have a broadband strategy and plan in place.

Several states have established or designated a lead agency to guide implementation of the state broadband plan. These agencies are instrumental in helping communities develop local broadband strategies that are effective and consistent with the state's goals, and in helping local community initiatives coordinate and link to the statewide backbone network.

In states without such an authority, responsibility is typically divided between two or more agencies, which have other priorities and responsibilities that may prevent them from demonstrating leadership and exerting necessary authority on broadband policy. Designating authority to a single agency not only can provide leadership, but also can prevent overlapping and inefficient use of scarce state resources.



- *States should assess their broadband status through a map or catalog of existing infrastructure*

Only a handful of states have conducted a thorough assessment of the existing broadband infrastructure. As a result, in most states, it is extremely difficult for policymakers to determine the location and status of DSL, wireless or cable infrastructure. Thus, it is a challenge to determine where broadband deployment is most needed, and there is no baseline against which to measure the progress of broadband deployment or the success of state policies.

This is particularly critical in efforts to target and assist underserved communities and ensure that all citizens benefit from broadband. In both Michigan and Ohio, for example, comprehensive mapping efforts form the basis for programs targeted to use broadband to stimulate economic development in rural areas of the state.

- *States should allow municipalities to provide wholesale services with their own broadband networks*

TechNet believes that, while the private sector should be the primary driver of broadband deployment, municipalities can also play an important role in deploying broadband networks. In particular, municipal networks can be critical where no private sector firm is willing or able to invest in a given community.

Currently, 12 states have enacted legislation limiting the ability of municipalities to build and maintain broadband networks.⁵ Of these, 2 limit the municipal role to providing wholesale networks.

Critics of municipal networks cite the inherent advantage that governments have in financing networks at low interest rates, and, where necessary, the ability to raise taxes. Local

⁵ The U.S. Supreme Court will be considering the constitutionality of these laws in the next term (See: FCC and the United States of America v. MO Municipal League, et al. Docket Number 02-1386 or http://supreme.lp.findlaw.com/supreme_court/briefs/02-1386/02-1386.pet.html).

governments, they believe, should not be able to exploit this advantage in direct competition with the private sector. For this reason, a few states have limited municipalities to only offering wholesale broadband services to private providers of retail voice, video, or data services.

The wholesale model can be an answer to the difficult problem of supplying broadband with municipal financing, while stimulating growth in the telecommunications sector and preventing government competition with private providers. Municipal wholesale networks focus competition on content and services rather than on control over the end user through ownership of the infrastructure. With this approach, consumers benefit from open competition in services using the municipal network, while service providers, in turn, benefit from having the network built by the municipality on advantageous terms.

In order to achieve the scale necessary to make wholesale networks a success, in states allowing "joint powers" agreements or "interlocal entities," cities join together in a wholesale network. An ambitious example is the UTOPIA (the Utah Telecommunications Infrastructure Agency) project, discussed in the Best Practices section of this report. In the right environment, particularly one that offers large-scale deployment, and provides a platform that enables the range of basic services (voice, video and data) necessary to achieve success from a revenue standpoint, municipal wholesale networks can be an important element of a state broadband strategy.

- *States should encourage broadband investment through innovative supply-side initiatives*

States have a significant ability to impact private sector deployment decisions and to spur increased investment, without state financing. One of the most effective ways for a state to stimulate broadband deployment to private users is to act as an anchor tenant in a particular geographic area, by procuring a state network to serve state agencies, schools or hospitals. In addition to the benefits that the state government receives from using this network, providing a core subscriber base enables the private provider that deploys the state network to further expand the infrastructure to serve customers and businesses in the proximate geographic area.



The state network may help to further meet state broadband goals if the state insists on redundant networks. Not only would such a policy better ensure the reliability of critical governmental communications, but with more than one network to the same location, there is greater likelihood that broadband will also be offered to consumers and the private sector.

In addition, state governments may aggregate the broadband demand of either public or private sector users, creating the economics that enable suppliers to justify building infrastructure to serve these users. By consolidating demand of state or local government users, the education community or the local business community, for example, a state government can ensure that enough demand exists to justify new investment for suppliers. The end-users pay for the resulting broadband services, but providers have been willing to offer volume discounts in exchange for the aggregated business the provider would receive as a result of state efforts. The result is enhanced broadband availability at relatively low cost to a state.

- *States should consider financial incentives for broadband deployment, in particular to underserved communities*

There are a number of means that state governments can use to provide additional incentives for suppliers to deploy broadband: financial grants, loans, or tax incentives. These incentives can be offered to stimulate statewide deployment, or they may be targeted at broadband deployment in underserved areas, in order to save scarce government resources for where they are most needed.

3.3 Demand-Side Policies

State governments can play an important role in encouraging broadband deployment through policies that stimulate consumer demand for broadband applications and services. While consumer adoption of broadband continues to increase, many consumers will wait on the sidelines for content and applications that specifically take advantage of broadband's high-speed capabilities. Although private sector creativity and innovation will ultimately be responsible for creating broadband applications and services that stoke demand, state



governments can play an important role in driving consumer acceptance and adoption of broadband.

For example, state governments are increasingly using information technology and e-government initiatives to provide constituent services. These capabilities allow states to reduce costs, increase customer satisfaction, and increase the confidence that citizens have in government. These initiatives can also familiarize citizens with potential broadband applications and spur demand for faster connections and enhanced e-government services.

We examine a range of state policies, including e-government initiatives, which provide incentives aimed at end-users to help stimulate the adoption and usage of broadband. These policies are important not only for helping users to enjoy the benefits of broadband, but also for creating additional demand for broadband deployment. Given that these demand-side policies only indirectly stimulate broadband deployment, however, such policies receive a lower weighting relative to policies that address deployment roadblocks or favor the supply side.

- ***States should adopt initiatives that provide incentives for public-sector and private-sector users to access broadband networks***

A number of states provide incentives for government bodies to access broadband. These incentives include discounts on broadband access, or grants and/or loans to finance the purchase of broadband access. Likewise, some states offer discounts, grants or loans to private sector users wishing to access broadband, and in addition, may also provide tax incentives to private sector users. As with supply-side incentives, these initiatives may be most efficient if targeted at underserved areas and/or users.

- ***States should actively encourage broadband usage by citizens through e-government initiatives***

States can have an active role not only in encouraging access to broadband, but also by promoting the usage of broadband by its citizens. The state can play a significant role in



promoting usage by providing online content and applications that require, or are enhanced by, broadband access. These range from tools that allow citizens to access information, to conduct transactions and to access government services, or to interact with elected representatives and government officials (e.g. through virtual town meetings). Examples of broadband applications already available to the general public include: distance learning, traffic cams that use streaming video, or streaming video of the state legislature proceedings.

Greater adoption of e-government services can also help to transform government institutions and agencies. E-government enhances the participation of citizens in government and civic responsibilities, and provides efficiencies and cost-savings. For instance, California estimates that allowing citizens to make an appointment with the Department of Motor Vehicles online saves the citizens alone at least \$18 million a year in time savings. Using the common MyCalifornia portal saves the state further millions in infrastructure and software costs.

Today there are few e-government applications for citizens that are broadband specific, but nonetheless, as citizens begin to rely more heavily on e-government applications, demand for broadband, which speeds up use of any online applications, will increase thereby putting pressure on suppliers to deploy broadband (and governments to begin to offer more applications that take advantage of the full power of broadband).

- ***States should encourage government usage of broadband applications***

Increasingly, states are making broadband applications available for government usage. Examples include: telemedicine programs that allow state hospitals and clinics to serve citizens in remote locations, distance learning at public schools and colleges, and initiatives to strengthen public safety/homeland security.

Among the broadband applications with the greatest potential to impact state economies is distance learning, which offers a means to provide educational opportunities that would otherwise be unaffordable or otherwise unattainable, particularly in rural or remote areas. The Iowa Communications Network, for instance, has been used to connect students with the



International Space Station, allow collaboration with students in Europe, and enable law enforcement officers in rural areas of the state to receive vital training.

These applications not only promote the efficient delivery of government services, but they also provide incentives for public-sector access to broadband that will help to stimulate supply.

- ***States should consider providing financial support that encourages the development of broadband applications that improve government services, or support next-generation technologies***

Just as a state may support providers of broadband services, the state may also choose to support developers of broadband applications through grants, loans or other financial incentives. Such state initiatives can be effective in encouraging development of broadband applications that improve government services, or emerging, next-generation technologies. Examples include the Digital Government Applications Academy in the state of Washington, where state agencies collaborate to create online applications, or California's Next Generation Internet (NGI) program, supporting two application centers to implement the NGI.

By stimulating the development of such broadband applications, states can help to create demand for broadband by potential users of these applications. This demand, in turn, provides further incentive to deploy broadband.



4 Results

4.1 The State Broadband Index

The overall ranking is in Exhibit 4.1:

Ranking	State	Score
1	Michigan	144.4
2	Florida	80.6
3	Missouri	75.7
4	Texas	73.0
5	Ohio	71.1
6	Washington	70.0
7	Kansas	67.3
8	Virginia	65.6
9	Colorado	58.5
10	Iowa	55.9
11	Oregon	52.1
12	Arizona	51.2
13	Indiana	47.5
14	California	46.6
15	Illinois	45.3
16	Minnesota	45.0
17	Nebraska	42.7
18	North Dakota	37.7
19	North Carolina	35.8
20	South Carolina	34.3
21	Maine	26.0
22	Pennsylvania	25.5
23	Alaska	25.2
24	Kentucky	24.3
25	Wisconsin	23.0

Exhibit 4.1: The State Broadband Index [Source: *Analysys*]



Analysys

4.2 Deployment Regulations Index

The top ten states in terms of deployment regulations are ranked in Exhibit 4.2.

<i>Ranking</i>	<i>State</i>	<i>Score</i>
1	Michigan	93.6
2	Missouri	62.4
3=	Kansas	52.0
3=	Texas	52.0
3=	Washington	52.0
6=	Florida	41.6
6=	Iowa	41.6
6=	Ohio	41.6
6=	Virginia	41.6
10=	Arizona	31.2
10=	Colorado	31.2
10=	Indiana	31.2
10=	Minnesota	31.2
10=	Nebraska	31.2
10=	North Dakota	31.2

Exhibit 4.2:
*Deployment
 Regulations Index*
 [Source: Analysys]

4.3 Supply-Side Promotion Index

The top ten states in terms of supply-side policies are ranked in Exhibit 4.3.

Ranking	State	Score
1	Michigan	35.8
2=	North Carolina	29.3
2=	Oregon	29.3
4	Florida	26.0
5	Colorado	22.8
6=	Illinois	19.5
6=	Maine	19.5
6=	Ohio	19.5
6=	Pennsylvania	19.5
6=	Wisconsin	19.5

Exhibit 4.3: Supply-Side Promotion Index [Source: Analysys]

4.4 Demand-Side Promotion Index

The top ten states in terms of demand-side policies are ranked in Exhibit 4.4.

Ranking	State	Score
1	Michigan	15
2	Florida	13
3	Virginia	11
4	Ohio	10
5	California	9.5
6	Tennessee	9
7=	Kentucky	8
7=	Texas	8
9=	Arizona	7
9=	South Carolina	7

Exhibit 4.4: Demand-Side Promotion Index [Source: Analysys]

4.5 Discussion

Michigan stands out clearly in the overall ranking of the states, with comprehensive policies that rank it at the top in each of the three categories. As discussed below in a case study, this results from enactment of a comprehensive legislative package in response to evidence that Michigan was falling behind other states in terms of broadband assets, and that this would have a long-run economic impact on Michigan's competitiveness. The other leading states have less consistent policies that do not cover all three categories of policies with equal strength.

It is important to note that the list of top states does not include some of the states that currently have the highest actual penetration of broadband, nor does it include all the states whose citizens are most likely to have a high demand for broadband. In fact, early broadband deployment is often driven by income demographics, workforce characteristics, geography, and other factors independent of public policy. As a result, states with an inherent advantage in attracting suppliers to meet their citizens' and businesses' demands may lag in public policies to stimulate deployment. Conversely, states that lag in deployment because of inherent disadvantages may have greater incentive to adopt policy tools that will stimulate deployment and demand. Many of the state broadband strategies and specific policies that we examine are newly enacted. While the benefits of many of these policies can already be seen, their full impact on broadband penetration and demand will not be immediate, and cannot yet be measured.

Those states that adopt policies to encourage broadband deployment and demand will, over time, offer a more competitive business climate that benefits citizens, industry, and ultimately, the state's economy.

4.6 Case Study: Michigan

Michigan is in the forefront of state broadband policy initiatives. Although the Michigan example may not be appropriate to all states, it provides a valuable case study of the type of policies and initiatives that can significantly impact broadband deployment.



4.6.1 Call to Action

The state of Michigan, commonly associated with traditional industry sectors, notably automobiles, has begun to position itself as a high-tech state. In part, this is because traditional industry sectors are becoming more technology-focused, and in part this reflects recognition that the technology industries will spur future economic growth. Michigan policymakers have realized that a ubiquitous broadband infrastructure can be as important to the state's future prosperity as the highway infrastructure was to its past and present industrial base.

A number of indicators suggested that Michigan was falling behind in broadband coverage. An August 2001 Federal Communications Commission report showed that, while Michigan was the 8th largest state in terms of population, it ranked only 10th in the number of broadband access lines deployed. More worrisome for Michigan's future, the state ranked only 24th in terms of the growth rate of broadband deployment. Another indicator of the problems facing Michigan was the fact that no Michigan city was listed in the top 25 cities ranked by the number of local competitors with their own municipal fiber networks at the end of 2000. Indeed, Detroit was the only city in Michigan with more than one competing fiber network.⁶ Although Detroit was the 10th largest city in the United States in 2000,⁷ it was tied for 38th place in terms of the number of competing CLECs.

Michigan policymakers determined that one of the main impediments to infrastructure investment in cities and towns was the inconsistent and burdensome rights-of-way procedures and fees being imposed by municipalities. A review of just the telecommunications fees charged by the municipalities in Southeastern Michigan showed a tremendous range in these fees. Municipalities charged both application fees, ranging from \$500 to \$10,000, as well as annual fees that were either fixed (ranging from nothing to \$500); a percentage of gross revenues (up to 5%); or a fee per lineal foot of wires, ranging from \$0.15 to \$1.25 per foot.

⁶ See *LinkMichigan*, Michigan Economic Development Corporation, May 14, 2001 (<http://linkmichigan.michigan.org/linkmichigan.pdf>), pp. 11-13 (*LinkMichigan Report*).

⁷ US Census Bureau, <http://www.census.gov/statab/ccdb/cit1020r.txt>.



This evidence helped spur the passage of the Michigan rights-of-way legislation described below.

4.6.2 Action Plan

The Michigan Economic Development Corporation (MEDC) has the mission of creating and retaining high-paying jobs in Michigan. As it became increasingly clear to MEDC that growth in well-paying, quality jobs was increasingly synonymous with high-tech employment, MEDC developed the Smart Tech Agenda, with the goal of building a critical mass of technology companies in the state. Recognizing that high-speed infrastructure is vital to meeting this goal (among other purposes), MEDC created the LinkMichigan initiative. In May 2001, the LinkMichigan plan was released, with four recommendations for increasing statewide access to broadband Internet:

- *Statewide public user aggregation.* Aggregate public-sector demand in order to make it more attractive for private sector providers to build new networks, while at the same time ensuring that these networks foster competition in underserved areas.
- *Tax and permitting fairness.* Establish a system for accessing public rights of way that is common across the state and decreases financial and bureaucratic burdens facing providers.
- *Access to information.* Ensure that the public and private sector have up-to-date information on installation schedules and locations served by networks.
- *Community assistance.* Provide local community planning grants to enable local communities to develop their own last-mile solution, if possible, in conjunction with the statewide backbone infrastructure initiative.

In short, the LinkMichigan initiative was a comprehensive plan to lower investment barriers and increase incentives to provide broadband infrastructure down to the last mile in all areas of



the state of Michigan. According to a report commissioned by LinkMichigan, the economic benefit resulting from the implementation of the LinkMichigan plan is an estimated increase in gross state product of \$440 billion over a ten-year period, leading to 497,000 new jobs.⁸

4.6.3 Results

In order to address the goals of the LinkMichigan plan, the Michigan HI Speed Internet Package of legislation was enacted on March 14, 2002. This package consisted of three bills:

- P.A. 48 of 2002, also known as the Metropolitan Extension Telecommunications Rights-of-Way Oversight (METRO) Act. This bill set common fees and a maximum permissible permit delay for municipalities in Michigan, and created the METRO Authority to administer the new system.
- P.A. 49 of 2002 – this bill created the Michigan Broadband Development Authority (MBDA) in order administer a fund that would provide incentives for broadband deployment.
- P.A. 50 of 2002 – this bill increased the incentive to deploy new infrastructure for broadband services by establishing a property tax credit to offset annual rights-of-way fees.

The METRO Act eliminated the disparities in rights-of-way access charges and delays across the state, and in the process ensured that the access fees are relatively low and based on cost (*see* section 5.2.1 below for a full description of this act) In addition, as a result of P.A. 50, these fees may be offset if the rights-of-way are used by broadband providers. Eliminating barriers to broadband investment is a crucial step to meeting an ambitious broadband strategy,

⁸ "Michigan Economic Development Corporation Releases Study Detailing Benefits of Accelerating Statewide Broadband Deployment," MEDC Press Release, December 3, 2001 (see <http://medc.michigan.org/news>).



by helping to unleash private-sector investment and competition in the provision of these services.

In Michigan, as in every state, there are areas that are likely to be underserved by the private sector. In order to help identify these areas, MEDC contracted with the Technology Policy Group of the Ohio Supercomputer Center to conduct a statewide assessment of broadband availability. The result was three maps of Michigan: backbone infrastructure, cable modem coverage, and DSL coverage⁹. These maps clearly show where more infrastructure is needed, and guide both policy-makers and service providers to make the necessary investments.

The Michigan Broadband Development Authority has raised financing to help companies fill gaps in broadband deployment. The MBDA's first loan was to mid-Michigan wireless provider ISP Wireless Group Inc. This company plans to install wireless broadband antennae and customer equipment in targeted small towns. The amount of the loan was \$350,000.¹⁰

In order to address LinkMichigan's Community Assistance recommendation, Michigan created a Regional Telecommunications Planning Program, which provides grants for local communities to plan infrastructure projects. Finally, Michigan is in the process of negotiating a contract with a vendor to aggregate public-sector users across the state into one network.

⁹ <http://linkmichigan.michigan.org/telecommunications.html>

¹⁰ See "Broadband agency makes its first loan," Michigan Craintech, March 24, 2003, <http://www.michigan.craintech.com/cgi-bin/article.pl?articleId=2859&dept=Enablers>.



5 Best Practices

This section highlights the best practices that we have identified in the states, presented in the form of a roadmap of policies that can maximize broadband availability and adoption for all citizens.

5.1 General Policies

5.1.1 Information Gathering

Before creating and implementing a plan for broadband deployment in a state, states should assess the current state of broadband deployment, penetration, and related data, in order to identify where there are broadband shortfalls, to ensure that policies will be both effective and efficient. For instance, Kentucky's "connectkentucky" (www.connectkentucky.org) program lays the groundwork for increasing broadband deployment. Connectkentucky is a public-private partnership that seeks to measure Kentucky's readiness to live in the networked world. Connectkentucky specifically seeks to measure broadband infrastructure, access and usage in Kentucky. Policy makers and businesses will be able to use this information to plan broadband deployment to ensure that all citizens and businesses in Kentucky have access to the state's networking capacity.

5.1.2 Formal Plan

A formal plan for increasing broadband deployment is an important step in focusing attention and policy on those areas of broadband deployment that should be targeted by state policies. For example, as part of its broad Third Frontier project for creating high-tech research and



jobs, (www.state.oh.us/gov/thirdfrontier.htm), the state of Ohio has created a Broadband Initiative, that covers public and private Internet access, as well as usage issues. According to a recent news release (www.state.oh.us/gov/releases/092602broadband.htm), the Broadband Initiative includes five components:

- *The Ohio Broadband Link* is an effort to aggregate the purchasing power of businesses statewide to help them obtain affordable rates on broadband services.
- *The Third Frontier Network* is a dedicated high-speed telecommunications system, which will directly link Ohio colleges and research facilities to facilitate collaborative research. Progress can be tracked at <http://www.tfn.oar.net/projectoverview.htm>.
- *eCommunities* is a pilot program, which will allow the state to provide new broadband services to two rural Ohio communities. The program will also provide training for local small business owners interested in learning more about the benefits of broadband services.
- *eVantage Ohio* is an effort to train small businesses in the use of e-commerce.
- The State Coordinating Mechanism, which will coordinate and review all state-related broadband activities.

This comprehensive plan will help to create a virtuous circle, where increases in broadband deployment and usage will bolster each other to help meet the needs and goals of Ohio.

5.1.3 Broadband Authority

In 2000, to help meet its rural broadband deployment goals, North Carolina created the Rural Internet Access Authority (www.ncruralcenter.org/internet/) to oversee rural deployment efforts. The authority's main goals are to provide high-speed Internet access at competitive prices to all North Carolinians within three years. Other goals of the Rural Internet Access Authority include: increasing Internet usage, providing model Telework Centers to provide



increased Internet access, and providing information on the availability of telecommunications and Internet services to all state residents.

In 2001, local dial-up access became available statewide, and the inventory of the state's telecommunications infrastructure was completed. In 2002, model telecenters were established, with statewide, high-speed Internet access scheduled to be available by December 2003. (<http://www.e-nc.org/about/enabling.shtml>).

5.2 Specific Policies

As discussed above, policies to promote broadband deployment can be grouped into three broad categories: policies that address deployment issues, supply-side policies, and demand-side policies.

5.2.1 Deployment Issues

Many states have recognized that it is critical to ensure that companies wishing to deploy broadband are not stopped by government roadblocks that raise costs or impose time delays. This is most notably true of rights-of-way access that is critical for deploying new infrastructure. Traditionally, municipalities have been responsible for rights-of-way access, which not only led to conditions that dampened investment incentives, but also created inconsistency across a state. As a result, a number of states have passed legislation that places limits on municipal actions.

A leading example of such legislation is Michigan's P.A. 48 (2002), also known as the Metropolitan Telecommunications Rights-of-Way Oversight Act ("METRO Act"), effective November 1, 2002, (www.michiganlegislature.org/documents/2001-2002/publicact/pdf/2002-PA-0048.pdf). The goals of this Act are to encourage new competition in broadband



infrastructure by streamlining the process for authorizing rights-of-way access, while ensuring reasonable management of these rights-of-way by the municipalities.¹¹

The METRO Act includes several of the most effective approaches to limiting rights-of-way fees and delays.

- *Policies that expedite access to rights-of-way:*
 - **Limit on delay** in processing a rights-of-way permit request. According to the METRO Act (Sec. 15(3)), a municipality has to approve or deny access within 45 days of receiving an application. Such limits provide certainty to operators that they will not face open-ended delays in receiving rights-of-way access.
 - **Streamlined dispute resolution.** Should the municipality or the operator not be able to agree on any specific aspects of rights-of-way access, the Michigan Public Service Commission will appoint a mediator, who has 30 days to resolve the dispute. (METRO Act (Secs. 6, 7)).
 - **Central authority** to coordinate rights-of-way issues with municipalities. As part of the METRO Act, Michigan created METRO Authority, an autonomous agency within the Department of Consumer & Industry Services responsible for coordinating with the municipalities, and assessing and distributing the access fees. (METRO Act Sec. 3).
 - **Standardized permit application.** The Act prescribes a standard rights-of-way application form (METRO Act Sec. 6(1)), which further simplifies the process of applying for rights-of-way access. This application form is available online at http://www.mml.org/pdf/telecom_mta_application.pdf.

¹¹ METRO Act, P.A. 48 of 2002, Sec. 1. (2).

- **Limits on local regulations.** Michigan prohibits municipalities from imposing conditions on providers beyond their usage of rights-of-way, in order to prevent regulatory control over providers being exerted at the local level. (METRO Act 15(4)).
- *Policies that limit costs for rights-of-way usage:*
 - **Limit on access fees.** In order to prevent municipalities from treating new deployment as a revenue opportunity, states such as Michigan have placed limits on what municipalities can charge. Michigan requires a one-time \$500 application fee to the municipality (METRO Act, Sec. 6 (4)), as well as an annual maintenance fee of 5 cents per linear foot of public rights-of-way used by the provider. Other states, such as California, have generally limited rights-of-way fees to “not exceed the reasonable costs of providing the service for which the fee is charged” (Cal. Gov’t Code Section 50030).
 - **Rebate for coordinated construction.** In order to encourage coordinated access to rights-of-way among multiple providers, and credit the providers for such usage, Michigan offers a 40% discount on rights-of-way access fees. (METRO Act Sec. 9).
 - **Rebate for broadband deployment.** In P.A. 50 of 2002, Michigan provides a full rebate on rights-of-way fees for the deployment of a broadband network.

As a result of this initiative, operators can be assured that they will be able to deploy broadband in a timely and cost-effective manner across the entire state of Michigan.



5.2.2 Supply-Side Issues

A number of states have policies in place that promote deployment of broadband. These policies fall into several groupings:

- **Financial support for deployment.** For instance, the Michigan Broadband Development Authority (www.broadbandauthority.org) was created to “help attract more private-sector investment in high-speed Internet infrastructure, and to increase demand for and utilization of broadband services.”¹² It does so by offering low-cost financing to two target groups:
 - operators, to make broadband infrastructure investments
 - broadband users, to buy hardware and software to increase their usage of broadband services.

The initial capitalization was \$50 million, raised from the sale of 6%, 20-year, zero-coupon bonds. This can then be disbursed through a variety of loan programs, including: seed loans for planning purposes; project development loans, and a variety of loans to providers and end-users, the terms of which depend on the status (profit or non-profit) of the organization.

- An early project financed by the MBDA is an \$8 million broadband link between the upper and lower peninsulas of Michigan, which will be constructed by Charter Communications. A portion of this new fiber-optic network will be sold to Merit Networks, Inc., a non-profit Internet Service Provider providing service to schools, colleges, and libraries in Michigan.¹³

¹² See MBDA Fact Sheet, www.michigan.gov/documents/MBDAFactSheet_50433_7.pdf

¹³ See MBDA News Release, “New \$8 Million Broadband Link Will ‘Bridge’ Michigan’s Peninsulas,” Dec. 18, 2002.



- **Non-financial support for deployment.** As part of its recent Broadband Initiative, the state of Ohio is implementing the Ohio Broadband Link. Business demands will be aggregated together in order to earn buyers' group discounts from the multiple vendors participating in the program. These discounts will create more demand leading to broadband deployment, but will only cost the state administrative fees as the discounts are provided by vendors. The program is administered by the Ohio Department of Development.

- **Government Networks**

- **State networks.** Many states have their own statewide broadband networks. Such networks can have two main benefits. First, they can enhance the efficiency of the government entities using the network, as well as improving the delivery of government services to all users. Second, by acting as an anchor tenant of broadband services from one or more private providers, the state can spur infrastructure investments in underserved areas, that can be made available to businesses and consumers in these areas.

For example, in 1995, the Commonwealth of Kentucky began to develop the Kentucky Information Highway, in a ten-year contract with all the local telephone companies as well as a long distance provider. (<http://www.state.ky.us/kirm/kih.htm>). This network now is accessible in every one of Kentucky's 120 counties, providing all the citizens of Kentucky with the benefits of accelerated deployment of broadband services.

- **Municipal deployment.** Most states allow municipal utilities to deploy broadband networks that can offer voice and video services in addition to broadband Internet access. In order to maximize the competition for consumers, and minimize any negative impacts of municipal deployment on private carriers (arising through low-cost financing, for instance), **Utah** passed H.B. 149 (2001) that has significant restrictions on the ability of municipalities that construct networks to offer retail services, but exempts wholesale services from these restrictions.



Under the framework of HB 149, UTOPIA, the Utah Telecommunications Infrastructure Agency (www.utopianet.org) is taking steps to realize the goal of ubiquitous 100Mbps broadband access. Under the Utah Interlocal Cooperation Act, giving cities the authority to jointly execute government activities, UTOPIA is an agency with 18 member cities, including Salt Lake City. As such, UTOPIA has effectively addressed the need for a large-scale network that is essential to the success of the wholesale model. Approximately one-third of Utah's population will be served by UTOPIA, and state officials expect it to double in size in the next few years. The result is expected to be the largest fiber to the home network in the Western Hemisphere.

5.2.3 Demand-Side Issues

By promoting access to, and usage of, broadband services, states can indirectly promote deployment by stimulating demand.

- Promotion of Broadband Access.** Texas has provisions in its Public Utility Regulatory Act, creating a Telecommunications Infrastructure Fund that awards grants and loans for educational institutions, libraries, and non-profit hospitals for broadband access, to encourage distance learning, information sharing programs of libraries, telemedicine and telehealth services. (<http://www.lonestarbroadband.org/background/texasstory.htm>). The fund receives 1.25% of the taxable telecommunications receipts of each telecommunications utility or commercial mobile service provider operating in Texas. The fund is capped at \$1.5 billion in total collections over its 10-year life. At the end of fiscal 2001, TIF had collected \$914 million in tax receipts and earned \$81 million in interest. Total grants awarded since 1996 total \$935 million. (Telecommunications Infrastructure Fund Board, Annual Report 2001 (Austin, Texas, January 14, 2002), pp. 1, 25–29.)
- Promotion of Broadband Usage.** Iowa has a statewide network, the Iowa Communications Network, which offers voice, video, and Internet connections to government facilities in each county (www.icn.state.ia.us). Over this network, Iowa offers



distance learning, telemedicine, and other broadband applications to schools, libraries, hospitals, and law enforcement agencies. Distance learning is a particularly powerful e-government application, as it allows schools and universities to efficiently share resources and make available to students learning opportunities across the state or around the world that would otherwise be unimaginable.

- **Wireless LAN Usage.** A few states have begun to offer wireless LAN services in state buildings. For instance, the South Dakota State Legislature offers all of its members a laptop with wireless LAN connectivity so that they are able to access relevant information and documents, even during floor debates.¹⁴ Although this usage is too nascent to include in our survey, we note this as an important best practice in promoting the usage of broadband connectivity, in this case, to improve the efficiency of government operations.

¹⁴ http://newsroom.cisco.com/dlls/innovators/wireless/customer_list.html



6 Conclusion

With this report, prepared by Analysys Consulting and TechNet, we provide a roadmap and resource to states seeking to increase broadband deployment to help meet the important goal of universal access to advanced broadband services by 2010.

Many states, recognizing the transformational impact that broadband can have on their citizens, economies, and delivery of government services, have begun to actively promote the deployment of broadband services. By removing roadblocks to deployment, state governments can effectively unleash the private sector to meet the broadband needs of consumers and companies. A number of states have also recognized that further stimulus through both supply-side and the demand-side policies may help to spread broadband networks to underserved areas and users.

Other states significantly lag behind in their recognition of the importance of broadband deployment and their adoption of policies to spur greater penetration and demand. And in many states, piecemeal efforts lack the leadership and focus to benefit large segments of a state's population.

Increasingly, however, those states that have adopted policies that encourage a next generation broadband infrastructure will benefit from a competitive climate that attracts and retains industry and employees. Today's investment in sound policies will reap the benefits of long-term technological and economical leadership.



Annex A Methodology

In this section we describe the methodology used to: identify the policies to be analyzed, gather the data, and translating the policies into numerical values that enabled ranking of the states.

A.1 Step 1. Identifying Policies

We identified state laws, regulations and policies that can significantly impact broadband deployment in three categories: policies that encourage broadband deployment, supply-side policies and demand-side policies. This identification was based on the industry knowledge of Analysys staff and TechNet members. We further refined the list of policies based on extensive discussions with stakeholders in the public and private sectors. These included operators (incumbent, competitors, and wireless), trade associations, (representing the telephony, cable and wireless industries) and government officials and policymakers (both federal and state legislators and regulators). The specific policies in each category are discussed in Annex B.

A.2 Step 2. Gathering Data

Analysys Consulting, with the assistance of the American Electronics Association (AeA), gathered the data from a variety of sources, including existing reports, surveys sent to government organizations in all 50 states, interviews, and exhaustive Web searches. In addition, we sent detailed surveys to each state's Public Utility Commission and each state's Chief Information Officer. These data sources are detailed in Annex C.



A.3 Step 3. Determining Numerical Scores

The existence and details of the policies for which we gathered data were then translated into numerical scores, based on whether states had addressed each policy issue and whether they had adopted an approach to each issue that would most effectively encourage broadband deployment and demand. We used the sum of these numerical scores to determine each state's ranking. For example, if a state limits the number of days that a municipality can take to process a rights-of-way permit, that state receives a score of one, and if there is no such policy, the state receives a score of zero. The details of this numerical translation for each policy are presented in Annex B, along with a description of each policy.

A.4 Step 4. Determining the Ranking

For each of the three categories, we sum up the scores for each state. Then, we weight the categories to get the overall score for each state. We weighted each of the categories in two ways. First, we normalized the score in each category to accommodate for the different number of policies included in each category, so that the total available score was the same for each category. Second, we weighted categories in terms of their importance in helping to meet TechNet's broadband goal. The weightings are presented below.

<i>Category</i>	<i>Weight</i>	<i>Rationale</i>
Deployment regulations	4	<p>Policies that address deployment regulations are most important in reaching the TechNet goal, for a number of reasons:</p> <ul style="list-style-type: none"> • Removing these roadblocks unleashes the full potential of the private sector, a critical TechNet principle. • The impact of the policies in the other two categories will be limited by any deployment regulations that have not been addressed by states.
Supply-side promotion	2	Second in importance are supply-side policies that help to create deployment incentives where others did not exist before.
Demand-side promotion	1	Finally, promoting demand, while important, is an indirect route to increasing broadband deployment.

Exhibit A.1: Category Weights [Source: Analysys]



We then summed up the weighted scores for each of the three categories in order to determine the final score for each state, as reported in **Exhibit 4.1**.



Annex B Policy Variables

B.1 Deployment Regulations

<i>Policy</i>	<i>Value</i>
Limit on the number of days that a municipality can take to process a rights-of-way permit request?	Yes=1; No=0
If so, maximum number of days the municipality has to act on the permit?	<=45 days =1; >45 days =0.5
Streamlined resolution of rights-of-way permit disputes?	Yes=1; No=0
Standardized permit application for all municipalities?	Yes=1; No=0
State authority to collect and disburse rights-of-way fees?	Yes=1; No=0
Prohibition on local regulations setting requirements unrelated to rights-of-way usage?	Yes=1; No=0
Does the state encourage coordinated rights-of-way construction by multiple providers?	Yes=1; No=0
Limit on the fees that municipalities can charge for rights-of-way usage?	Yes=1; No=0
Prohibition on municipalities charging in-kind compensation in return for rights-of-way access?	Yes=1; No=0
Rebate on rights-of-way fees for the deployment of a broadband network?	Yes=1; No=0

Exhibit B.1 *Deployment Regulations [Source: Analysys]*

B.2 Supply-Side Promotion Regulations

<i>Policy</i>	<i>Value</i>
Formal state plan to increase broadband deployment?	Yes=1, No=0
Dedicated state agency to coordinate broadband deployment?	Yes=1; No=0
Databases or maps of existing broadband deployment?	Yes=1; No=0
Limits to municipal deployment of broadband services?	Yes=0; No=1
If so, are municipalities limited to offering wholesale services?	Yes=1; No=0
State-owned backbone network?	Yes=1; No=0
Does the state act as a primary customer (or anchor tenant) to help attract broadband services?	Yes=1; No=0
Does the state aggregate demand for broadband?	Yes=1; No=0
Does the state maintain multiple broadband networks to the same locations (to ensure backup connectivity)?	Yes=1; No=0
Does the state lease its broadband networks to private suppliers?	Yes=1; No=0
Provision of grants to suppliers for broadband deployment?	Yes=1; No=0
Are the grants targeted to deployment in underserved/rural areas?	Yes=1; No=0
Loans to suppliers for broadband deployment?	Yes=1; No=0
Are the loans targeted to deployment in underserved/rural areas?	Yes=1; No=0
Tax incentives to suppliers for broadband deployment?	Yes=1; No=0
Are the tax incentives targeted to deployment in underserved/rural areas?	Yes=1; No=0

Exhibit B.2: Supply-Side Deployment Regulations [Source: Analysys]



B.3 Demand-Side Promotion Regulations

<i>Policy</i>	<i>Value</i>
Discounts to public sector users for broadband access?	Yes=1, No=0
Are the discounts targeted to public-sector users in underserved/rural areas?	Yes=1; No=0
Grants to public-sector users for broadband access?	Yes=1; No=0
Are the grants targeted to public-sector users in underserved/rural areas?	Yes=1; No=0
Loans to public-sector users for broadband access?	Yes=1; No=0
Are the loans targeted to public-sector users in underserved/rural areas?	Yes=1; No=0
Does the state provide access to state-owned broadband networks for private sector end-users?	Yes=1; No=0
Does the state have a digital divide program?	Yes=1; No=0
Discounts to private sector for broadband access?	Yes=1; No=0
Are the discounts targeted to private-sector users in underserved/rural areas?	Yes=1; No=0
Grants to private sector for broadband access?	Yes=1; No=0
Are the grants targeted to private-sector users in underserved/rural areas?	Yes=1; No=0
Loans to private sector for broadband access?	Yes=1; No=0
Are the loans targeted to private-sector users in underserved/rural areas?	Yes=1; No=0
Tax incentives to the private sector for broadband access?	Yes=1; No=0
Are the tax incentives targeted to private-sector users in underserved/rural areas?	Yes=1; No=0
Does the state encourage public-private consortiums for the purpose of offering or deploying broadband services?	Yes=1; No=0
Does the state provide financial support to developers of broadband applications?	Yes=1; No=0
Does the state have a telemedicine program for state health institutes?	Yes=1; No=0
Does the state have a distance learning program for state educational institutes?	Yes=1; No=0
Does the state have any public safety/homeland security broadband applications?	Yes=1; No=0
Does the state have tele-work programs for government employees using broadband?	Yes=1; No=0
Does the state have other broadband applications for public-sector users? (e.g. Department of Corrections using streaming video for remote hearings and sentencing?)	Yes=1; No=0
Does the state have distance learning for the general public using broadband?	Yes=1; No=0
Does the state offer other broadband applications for the general public (e.g. traffic cams using streaming video)?	Yes=1; No=0
Does the state provide streaming video of state legislature proceeding?	Video=1; Audio=0.5

Exhibit B.3: Demand-Side Deployment Regulations [Source: Analysys]



Annex C Acknowledgements

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Analysys

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Promoting Broadband through Public Rights-of-Way and Public Lands, National Association of Regulatory Utility Commissioners, July 31, 2002.

50-State Survey of Rights-of-Way Statutes, National Telecommunications and Information Administration, May 21, 2003.

State Regulatory Treatment of Advanced Telecommunications Services: Results of the 2002 Survey, The National Regulatory Research Institute, October 2002.

TIA Assessment of State Broadband Initiatives, Telecommunications Industry Association, Fall 2002.

Telecommunications Laws, National Conference of State Legislatures, Listings for 1999, 2000, 2001, and 2002.

Public Power: Powering the 21st Century with Community Broadband Services, American Public Power Association, June 2002.

A Benchmarking Study of State Telecommunications Networks, prepared for Colorado Multi-use Network, December 4, 2002.

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About Analysys Consulting. Analysys, the global advisers in telecommunications, IT and new media, works at the forefront of the communications revolution, delivering recommendations and insight to clients in the public and private sectors. Analysys staff provide strategy and systems consultancy and information services to the companies that are creating the networked economy, and regulatory and policy advice to governments on all six continents. Recently, Analysys has provided support to regional and national governments in Europe seeking to increase the deployment of broadband for government and private use. In addition to our offices in Washington DC and San Francisco, we are located in Cambridge, London, Glasgow, Madrid, Milan and Paris.

Michael Kende headed the Analysys effort on this project – he can be contacted at Michael.kende@analysys.com. See also www.analysys.com.

About TechNet. The Technology Network (TechNet) is the national network of chief executive officers and senior executives of the nation's leading companies in the fields of information technology, biotechnology, venture capital, investment banking and law. Based in Silicon Valley, TechNet has offices in Seattle, Austin and Orange County, California. TechNet has called for an affordable 100Mbps broadband connection to 100 million homes and small businesses by 2010, and a national strategy to achieve this goal. See www.technet.org.

